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**FEDERAL FACILITY FOR CONTROL AND  
ABATEMENT OF RADON-222 EMISSIONS**

**11/19/91**

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LEGAL AGREE**

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VUNITED STATES DEPARTMENT OF  
ENERGY

and

UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCYFEDERAL FACILITY  
AGREEMENTCONTROL AND  
ABATEMENT OF  
RADON-222 EMISSIONS

The Environmental Protection Agency (U.S. EPA) and the United States Department of Energy (U.S. DOE) are parties to this Federal Facility Agreement (Agreement), which is entered into pursuant to Executive Order 12088, October 13, 1978 (43 Fed. Reg. 47707, October 17, 1978) and section XXXI.B. of the parties' Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 et seq. ("CERCLA") Consent Agreement. The Office of Management and Budget (OMB) and the United States Department of Justice (DOJ) will take cognizance of this Agreement pursuant to their respective duties to assure compliance with the environmental laws under Executive Order 12088 and the particular statutes herein addressed.

I. SCOPE

1. This Agreement is entered into by the parties to ensure that U.S. DOE takes all necessary action to control and abate radon-222 emissions at its Feed Materials Production Center (FMPC) located in Fernald, Ohio.

2. This Agreement shall apply to U.S. DOE, its officers, successors in office, agents, employees, and contractors of the FMPC in Fernald, Ohio. U.S. DOE agrees to give notice of this

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Agreement to any subsequent owner and/or operator prior to the transfer of ownership or the obligation of a new contractor and/or operator and shall simultaneously notify U.S. EPA of any such change or transfer.

3. The parties recognize the authority of the State of Ohio as described at 40 C.F.R. §61.17.

## II. AUTHORITIES

4. Pursuant to sections 1-101, 1-201, and 1-202 of Executive Order 12088, Federal Executive agencies are required to take all necessary action to prevent, control, and abate environmental pollution emanating from facilities or activities under their control and to cooperate and consult with the Administrator of U.S. EPA in taking such action. Radon-222 emissions from Department of Energy facilities have been designated by the Administrator of U.S. EPA as hazardous air pollutants pursuant to the Clean Air Act (CAA), as amended by Public Law 101-549 (104 Stat. 2399 (1990)), 42 U.S.C. §7401 et seq. Therefore, pursuant to the aforementioned sections of Executive Order 12088, U.S. DOE must take all necessary action in cooperation and consultation with U.S. EPA to control and abate radon-222 emissions at the FMPC.

5. On December 15, 1989, pursuant to section 112 of the CAA, 42 U.S.C. §7412 (1988), U.S. EPA promulgated a National Emission Standard for Hazardous Air Pollutants (NESHAPs) for radon-222 emissions from U.S. DOE facilities (54 Fed. Reg. 51701) which was codified at 40 C.F.R. Part 61, Subpart Q. The parties

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agree that the Subpart Q standard is an "applicable pollution control standard" as that term is used in Executive Order 12088 but disagree as to the timeframe within which U.S. DOE must demonstrate compliance with Subpart Q at the FMPC. The parties do not resolve that issue with this Agreement. Except as provided in paragraph 40 of this Agreement, the parties stipulate that nothing in this Agreement shall be construed to waive, estop, or in any other manner affect either parties' rights, authorities, or defenses in any future CAA enforcement action.

6. This Agreement is also entered into pursuant to U.S. EPA's responsibilities under Executive Order 12316, August 14, 1981, 46 Fed. Reg. 42237, and U.S. DOE's authority under the Atomic Energy Act, as amended, 42 U.S.C. §2011 et seq. The parties agree to meet their responsibilities under the authorities recited herein.

### III. RELATIONSHIP OF THIS AGREEMENT TO THE CERCLA CONSENT AGREEMENT

7. The "CERCLA Consent Agreement" means the parties' June 1990 Consent Agreement, and any subsequent amendments thereto, concerning U.S. DOE compliance at the FMPC with the requirements of CERCLA. The parties agree that all schedules for actions required by this Agreement have been or will be established pursuant to the CERCLA Consent Agreement.

### IV. STATEMENT OF FACTS

8. For purposes of this Agreement, the following constitutes a summary of facts upon which this Agreement is based. None of the facts related herein shall be considered

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admissions by any party and shall not be used by any person related or unrelated to this Agreement for purposes other than determining the basis of this Agreement. Nothing shall prevent any person related or unrelated to this Agreement from using for any purpose independent evidence which verifies the summary of facts. receipt of the above documentation

9. U.S. DOE owns the FMPC which began operations in 1952. Since July 1989, U.S. DOE has not conducted production operations at the FMPC and, on February 21, 1991, submitted to Congress a retraining and closure plan for the FMPC. The primary function of the FMPC was the production of metallic uranium fuel elements and target cores and other uranium products for use in U.S. DOE programs. In prior years, small amounts of thorium were also processed. The principal radionuclides present at the FMPC include uranium (U)-238, U-235, and thorium (Th)-232, with their respective decay chains. Transuranics and fission products are also present in lesser quantities.

10. Between the years 1952 and 1986, National Lead of Ohio, Inc. was U.S. DOE's management and operating contractor for the FMPC. From 1986 through the present, Westinghouse Materials Company of Ohio is U.S. DOE's management and operating contractor for the FMPC.

11. The FMPC is located approximately 20 miles northwest of downtown Cincinnati, Ohio. The FMPC production area covers approximately 136 acres in the center of a 1,050 acre site.

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Several rural communities lie within a 1 to 3 mile radius of the plant.

12. The entire FMPC site is a "facility" as defined at 40 C.F.R. §61.191(a), 54 Fed. Reg. 51695 (Dec. 15, 1989); and contains existing "stationary sources" as defined at 40 C.F.R. §61.02 (hereinafter referred to as "source" or "sources").

13. Radon-222 emissions from Department of Energy facilities are regulated under the standard at 40 C.F.R. Part 61, Subpart Q, 54 Fed. Reg. 51701 (December 15, 1989), entitled the "National Emission Standards for Radon-222 Emissions from Department of Energy Facilities" (Radon-222 Emissions Standard).

14. In the 1986 Federal Facility Compliance Agreement between the parties, Part 1 of the Compliance Plan (Initial Remedial Measures), Paragraph B, U.S. DOE agreed to develop and provide to U.S. EPA a plan and implementation schedule for the interim control of radioactive emissions, including radon-222 gas, from the K-65 silos. U.S. EPA and U.S. DOE agreed that this requirement was to be fulfilled independently of the requirement to perform an Remedial Investigation and Feasibility Study (RI/FS).

15. Based on preliminary and conservative estimates, the radon-222 emissions from the K-65 silos currently exceed 20 pCi/m<sup>2</sup>-s.

16. In accordance with section IX.A.4. of the CERCLA Consent Agreement, U.S. DOE submitted the Engineering Evaluation and Cost Analysis for the K-65 Silo Removal Action (July 1990)

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(hereinafter referred to as "EE/CA") Based upon U.S. DOE estimates presented in the EE/CA, the maximum individual risk attributable (70 year exposure) to radon-222 emissions from the K-65 silos to nearby residents is approximately  $5 \times 10^{-4}$ . This risk is greater than the risk attributable to radiation exposure to the public from all other ~~subsequent modifications~~ at the FMPC. In accordance with section IX.A. of the CERCLA Consent Agreement, the EE/CA identified a preferred removal action alternative which will reduce radon-222 emissions from the K-65 silos and reduce risk to the exposed population. U.S. EPA conditionally approved the EE/CA on September 4, 1990.

17. On November 2, 1990, U.S. DOE submitted to U.S. EPA a work plan for the K-65 silo removal action. U.S. EPA approved this work plan on November 30, 1990.

18. In accordance with section X.C.4. of the CERCLA Consent Agreement, U.S. DOE will propose a final remedial action for the K-65 silos. The final remedial action will be approved and implemented in accordance with section XII of the CERCLA Consent Agreement.

#### V. RADON-222 CONTROL AND ABATEMENT PLAN

In accordance with the following plan, U.S. DOE shall control and abate radon-222 emissions at the FMPC.

##### K-65 SILOS

19. In accordance with the EE/CA for the K-65 silos that U.S. DOE submitted to U.S. EPA on August 1, 1990, and the work plan for implementation of the EE/CA approved by U.S. EPA on

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November 30, 1990, U.S. DOE shall implement the approved removal action for the K-65 silos. ~~Under the Agreement shall be~~

20. The objective of the ~~approved removal action~~ for the K-65 silos is to reduce radon-222 emissions to a level as low as reasonably achievable (ALARA) and the goal is an ambient radon-222 level of no greater than ~~that specified in the approved EE/CA~~ work plan. ~~and 120 of the CAA for the Subpart~~

21. U.S. DOE shall implement the ~~approved removal action~~ in accordance with the schedule in the work plan ~~that was approved~~ as final by U.S. EPA on November 30, 1990, or amended thereafter in accordance with the CERCLA Consent Agreement.

22. Within 60 days of completion of the approved removal action, U.S. DOE shall propose to U.S. EPA the methodology for estimating radon-222 concentration reductions resulting from completion of the approved removal action. Within 30 days of receiving U.S. DOE's proposal, U.S. EPA shall review and either approve or comment on the methodology.

23. As provided in the CERCLA Consent Agreement, U.S. DOE and U.S. EPA will evaluate the performance of the removal action and determine whether or not additional measures prior to completion of the final remedial action are needed based on a number of factors, including the timeframe until final remediation and review of data from the monitoring program approved as part of the work plan.

24. U.S. DOE agrees that the requirements for estimating radon-222 concentration reduction as described in paragraph 22

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above may be utilized only until the completion of the remedial action required by the CERCLA Consent Agreement, consistent with the requirements of section 121(d) of CERCLA, at which time compliance shall be demonstrated with the Radon-222 Emissions Standard at Subpart Q by a method to be determined and approved by U.S. EPA.

25. At completion of the remedial action, in accordance with the CERCLA Consent Agreement, U.S. DOE agrees to have disposed of the K-65 residues in such a manner that radon-222 emissions from the source are no greater than 20 pCi/m<sup>2</sup>-s as an average for the entire source. U.S. DOE will demonstrate radon-222 emissions reduction using methodology approved by U.S. EPA.

ALL REMAINING SOURCES AT THE FMPC SITE THAT EMIT RADON-222

26. In December 1990, U.S. DOE submitted to U.S. EPA estimates based upon computer modeling of radon-222 emissions from waste pits 1, 2, and 3 which indicated high variability in predictions of radon-222 flux. U.S. DOE will directly measure radon-222 flux from waste pits 1, 2, 3, 4, and 5, and the clear well. U.S. DOE shall include the direct measurement data in the RI/FS that includes waste pits 1, 2, 3, 4, and 5, and the clear well under the CERCLA Consent Agreement.

27. U.S. DOE shall estimate, based upon characterization data, radon-222 emissions from silo three and include that data in the RI/FS that includes silo three under the CERCLA Consent Agreement.

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28. U.S. DOE will submit to U.S. EPA documentation on its estimates of current radon-222 emissions from any existing but newly discovered sources that contain radon-222 in insufficient concentrations to emit radon-222 in excess of the standard prior to remedial action at the FMPs within 30 days of such discovery.

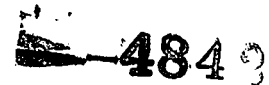
29. Within 30 days of receipt of the above documentation, U.S. EPA shall submit to U.S. DOE a written response stating which of the estimates require confirmation through direct measurement or other methodology, as appropriate, of the radon-222 emissions.

30. Within 45 days of receipt of U.S. EPA's response, U.S. DOE shall submit in writing to U.S. EPA the methodology to be used for direct measurement or other appropriate means of characterization of the relevant emissions where required pursuant to paragraph 29 of this Agreement.

31. Upon final U.S. EPA approval of the methodology for characterization of the radon-222 emissions where required pursuant to paragraph 29 of this Agreement, U.S. DOE shall measure or otherwise characterize the emissions and submit the results of the measurement to U.S. EPA within 30 days.

32. If radon-222 emissions from any waste pit, the clear well, silo three, or any existing but newly discovered source as defined in paragraph 28 exceed 20 pCi/m<sup>2</sup>-s as an average for each entire source, as expeditiously as practicable U.S. DOE will follow the procedures specified in section IX of the CERCLA Consent Agreement for consideration of removal actions.

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33. U.S. DOE shall conduct any final remedial action for any waste pit, the clear well, silo three, or any newly discovered source as defined in paragraph 28 in accordance with the schedules and requirements of section X of the CERCLA Consent Agreement. At completion of any such remedial action, in accordance with the CERCLA Consent Agreement, U.S. DOE agrees to have disposed of the radon-222 emitting wastes in such a manner that radon-222 emissions from each source are no greater than 20 pCi/m<sup>2</sup>-s as an average for each entire source. U.S. DOE will demonstrate radon-222 emissions reduction using methodology approved by U.S. EPA.

#### VI. REPORTING

34. U.S. DOE agrees to report to the U.S. EPA all steps undertaken in the preceding month to implement Part V of this Agreement, and to submit all data generated as a result of these actions. This data must be submitted to U.S. EPA by the 20th of each month, for the previous month. This data should be submitted with the monthly reports required by the CERCLA Consent Agreement.

#### VII. DELAYS AND TIME EXTENSIONS

35. If delay is anticipated in meeting any scheduled date related to this Agreement, U.S. DOE shall immediately notify U.S. EPA pursuant to the procedures specified in the CERCLA Consent Agreement. U.S. EPA shall make a determination in accordance with the CERCLA Consent Agreement on whether the relevant schedule shall be revised. If U.S. EPA grants any extensions to

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schedules pursuant to the CERCLA Consent Agreement, such extensions shall be deemed as incorporated into this Agreement. If U.S. DOE disagrees with U.S. EPA's determination, the Dispute Resolution procedure specified in the CERCLA Consent Agreement shall control.

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**VIII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATIONS**

36. The effective date of this Agreement shall be the date on which it is signed by both U.S. EPA and U.S. DOE.

37. This Agreement will be reviewed by the parties every five years to confirm the Agreement remains current, accurate and complete and the Agreement will be modified to the extent deemed necessary by both parties as a result of that review. The Agreement may also be modified at any time by agreement of the parties. Any such modification shall be in writing and, unless otherwise agreed, shall be effective on the date on which the modification is signed by both parties.

38. In the event that there is an amendment of the Clean Air Act, or revisions to the regulations promulgated thereunder, the parties shall review this Agreement and as necessary renegotiate in accordance with the CERCLA Consent Agreement process to reflect changed CAA requirements or regulations. During the pendency of any renegotiation, this Agreement shall remain in effect unless specifically waived in whole or in part by U.S. EPA, to the extent the Agreement does not conflict with statutory or regulatory changes.

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**IX. DISPUTE RESOLUTION**

39. Disputes arising under this Agreement shall be resolved according to the dispute resolution procedures specified in the CERCLA Consent Agreement.

**X. SANCTIONS**

40. U.S. EPA agrees to initiate no enforcement action pursuant to sections 113, 118, and 120 of the CAA for the Subpart Q standard at the FMPC so long as U.S. DOE remains in compliance with the requirements of this Agreement. Based upon the facts and circumstances set forth in Parts IV and V of this agreement, U.S. EPA hereby agrees to initiate no action pursuant to section 303 of the CAA. If at any time U.S. EPA determines that U.S. DOE is not in compliance with the requirements of this Agreement, enforcement authorities established by the CAA shall be available to U.S. EPA in addition to the Dispute Resolution procedure cited in paragraph 39. Notwithstanding U.S. DOE's compliance with the requirements of this Agreement, if new facts and circumstances not included in Parts IV and V of this Agreement arise warranting such action, U.S. EPA reserves the right to initiate action pursuant to section 303 of the CAA.

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**XI. SUBMITTAL**

41. The parties agree that all information required by this Agreement shall be submitted in writing and mailed to each addressee below.

U.S. DOE: Site Manager  
Fernald Site Office  
U.S. Department of Energy  
P.O. Box 398705  
Cincinnati, Ohio 45239-8705

Director  
Office of Environmental Restoration  
U.S. Department of Energy  
Washington, D.C. 20545

Director  
Waste Management Division  
U.S. EPA-Region V (5H-12)  
230 South Dearborn Street  
Chicago, Illinois 60604

Director  
Air and Radiation Division  
U.S. EPA, Region V (5AT-26)  
230 South Dearborn Street  
Chicago, Illinois 60604

Director  
Ohio Environmental Protection Agency  
1800 WaterMark Drive  
P.O. Box 1049  
Columbus, Ohio 43266-0149

Director  
Southwestern Ohio Air Pollution  
Control Agency  
1632 Central Parkway  
Cincinnati, Ohio 45210

**XII. ACCESS**

42. U.S. DOE agrees that, pursuant to section 114 of the CAA and section 1-202 of Executive Order 12088, the Administrator or authorized representatives shall have the right of entry into, upon, and through the FMPC site for purposes consistent with this

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Agreement and subject to statutory and regulatory requirements as may be necessary to protect national security. Such authority shall include the carrying out of any inspections, taking photographs, reviewing any records, observing tests, and conducting any tests which are necessary to ensure that the purposes of this Agreement are effectuated. U.S. EPA, its representatives, and its contractors shall comply with all approved health and safety plans.

### XIII. FUNDING

43. It is the expectation of the parties to this Agreement that all obligations of U.S. DOE arising under this Agreement will be fully funded. U.S. DOE shall take all necessary steps and make best efforts to obtain timely funding to meet its obligations under this Agreement. Any requirement for the payment or obligation of funds by U.S. DOE established by the terms of this Agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted. If appropriated funds are not available to fulfill U.S. DOE's obligations under this Agreement, U.S. EPA reserves the right to initiate any other action which would be appropriate absent this Agreement.

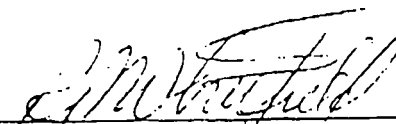
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**4842****XIV. TERMINATION**

44. This Agreement shall terminate either upon (1) mutual consent of the parties, or (2) demonstration of compliance in accordance with paragraphs 25 and 33 of this Agreement over a period of 1 year following completion of all relevant remedial actions.

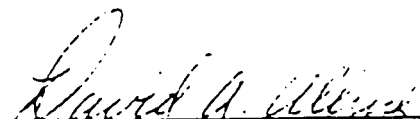
IT IS SO AGREED;

BY:

  
R. P. Whitfield  
Deputy Assistant Secretary  
for Environmental Restoration  
U.S. Department of Energy

  
Date

BY:

  
Valdas V. Adamkus  
Regional Administrator  
U.S. Environmental Protection Agency  
Region V

  
Date

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